



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,345	01/10/2007	Michihiko Namba	296543US0PCT	8956
22850	7590	06/10/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
SHAH, MANISH S				
ART UNIT		PAPER NUMBER		
2853				
NOTIFICATION DATE		DELIVERY MODE		
06/10/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

### Office Action Summary

**Application No.**

10/593,345

**Applicant(s)**

NAMBA ET AL.

**Examiner**

Manish S. Shah

**Art Unit**

2853

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5,9-11 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,9-11 and 14-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, 5, 9-11, 14-16 & 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Namba et al. (# US 2005/0054751) in view of Ichikawa et al. (# US 5980624) and Nagashima et al. (# US 2005/0170989).

Namba et al. discloses:

- A recording ink comprises: water (see Example), a wetting agent, a surfactant (see Abstract; [0107]), and colorant (see Abstract; [0103]; [0119]), wherein wetting agent comprises glycerin, 3-butanediol ([0107]) and the recording ink is at least one selected from the cyan ink, magenta ink, and yellow ink (see figure: 1; [0121]). They also disclose that surfactant is selected from anionic, a nonionic surfactant ([0143]).
- An ink cartridge comprising a container and a recording ink contained in the container (see figure: 2-3).
- An inkjet recording apparatus comprising: an ink ejecting unit by which to a recording ink, a stimulation is applied and the recording ink is ejected for forming the image (see figure: 1-4; [0221]-[0227]).

- An inkjet recording process comprising: ejecting a recording ink by which to the recording ink, a stimulation is applied and the recording ink is ejected for forming the image (see Examples; [0285]-[0289]).
- An ink record comprising: an image formed on a recording medium using a recording ink (see Examples).
- The ink composition comprising the colorant is an aqueous dispersion of polymer fine particles comprising a colorant (see Examples; [0119]).
- The polymer of the polymer fine particles is any one of a vinyl polymer and a polyester polymer ([0123]).
- The surfactant containing fluorine ([0102]; [0151]; [0184]).
- The recording ink comprises a C8 to C11 polyol compound and a glycol ether compound ([0172], [0184]).
- The C8 to C11 polyol compound is either 2-ethyl-1,3-hexanediol or 2,2,4-trimethyl-1,3-pentanediol ([0173]-[0174]).
- The viscosity of the recording ink at 25 C is 5 mPa.sec to 20 mPa.sec (5 cps or more, more preferably 8 cps or more) ([0108]).
- The recording ink is at least one of a cyan ink, a magenta ink, a yellow ink and a black ink (see Examples).
- The nozzle of the inkjet head has a diameter of 30 micrometer or less ([0091]; [0222]).
- The stimulation is one selected from the group consisting of heat, pressure, vibration and light (see figure: 1-4; [0238]-[0239]).

Namba differs from the claim of the present invention is that (1) the wetting agent comprises 3-methyl-1,3-butanediol. (2) The ink composition includes the fluorine compound, wherein the compounds represented by the following formula (I):



wherein "m" is an integer of 0 to 10 and "n" is an integer of 1 to 40.

(3) The wetting agent is any one of (1) a combination of 3-methyl-1,3-butanediol and glycerin and (2) a combination selected from the group consisting of combinations of (i) 3-methyl-1,3-butanediol, glycerin and at least one of (ii) 1,3 butanediol, triethylene glycol, 1,5-pentadiol, propylene glycol, 2-methyl-2,4-pentadiol, diethylene glycol, dipropylene glycol, trimethylol propane and trimethylol ethane.

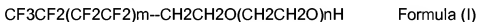
(4) The amount of the wetting agent in the recording ink is 20% by mass to 50% by mass.

Ichikawa et al. teaches to get ink with excellent drying property, ink comprises a wetting agent (solvent), a surfactant and colorant (column: 4, line: 65-68 to column: 5, line: 1-65), wherein wetting agent comprises 3-methyl-1,3-butanediol (column: 3, line: 5-15). They also teaches that the wetting agent is any one of (1) a combination of 3-methyl-1,3-butanediol and glycerin (column: 3, line: 5-65; column: 4, line: 1-60) and (2) a combination selected from the group consisting of combinations of (i) 3-methyl-1,3-butanediol, glycerin and at least one of (ii) 1,3 butanediol, triethylene glycol, 1,5-pentadiol, propylene glycol, 2-methyl-2,4-pentadiol, diethylene glycol, dipropylene glycol, trimethylol propane and trimethylol ethane (column: 3, line: 5-65). They also

teaches that the amount of the wetting agent in the recording ink is 20% by mass to 50% by mass (column: 3, line: 45-52).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Namba et al. by the aforementioned teaching of Ichikawa in order to have the ink composition with excellent drying property, which gives high quality printed image.

Nagashima et al. teaches that to get the high quality printed image, ink composition includes the fluorine compound ([0188]-[0190]), wherein the compounds represented by the following formula (I):



wherein "m" is an integer of 0 to 10 and "n" is an integer of 1 to 40 (see Abstract; [0073]-[0082]; see claim 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Namba et al. by the aforementioned teaching of Nagashima et al. in order to have the high quality printed image.

2. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Namba et al. (# US 2005/0054751) in view of Kakuda et al. (# US 6109728).

Namba et al. discloses all the limitation of the ink jet recording apparatus and ink composition except that the part of the liquid space part, fluid resistance part, vibrating

plate and nozzle of the inkjet head is produced using a material comprising at one of silicone and nickel.

Kakuda et al. teaches that to uniform discharge stability of the ink droplet, ink jet head nozzle part is made of a thin sheet of Nickel or Silicon (column: 7, line: 48-65). They also teaches that the oscillation plate is made of nickel (column: 8, line: 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink jet recording apparatus of Namba et al. by the aforementioned teaching of Kakuda et al. in order to have the uniform discharge stability of the ink droplet, which gives high quality printed image.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Manish S. Shah/  
Primary Examiner  
Art Unit 2853

/MSS/